

Foxtail Palm (*Wodyetia bifurcata*): Identification, maintenance and problems

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Several foxtail palms



Petiole are 6 to 12 inches long

Common Names: Foxtail palm

Synonyms (Discarded Names): None found

U.S.D.A. Zone: 10a-12 (30°F minimum)

Growth Rate: Fast once established

Typical Dimensions: 10'-30' H x 11'-14' W

Habit: Solitary, canopy of 8-12 leaves

Trunk base: 12"-16" diameter

Crownshaft: Narrow, green with whitish waxy scales, 36"-48" long

Leaf Type: Pinnately compound

Typical Leaf Size: 10'-12' long

Self-Cleaning: Yes

Roots: Exposed root initials on older palms

Salt Spray Tolerance: Moderate

Light Requirements: High

Drought Tolerance: High

Wind Tolerance: Moderate

Soil Requirements: Acidic

Nutritional Requirements: High

Major Potential Insect Problems: Banana moth, sugar cane borer

Major Potential Disease Problems: Ganoderma butt rot, leaf spots

Human Hazards: None

Propagation: Seeds

Uses: Specimen, streetscapes, parks

Geographic Distribution

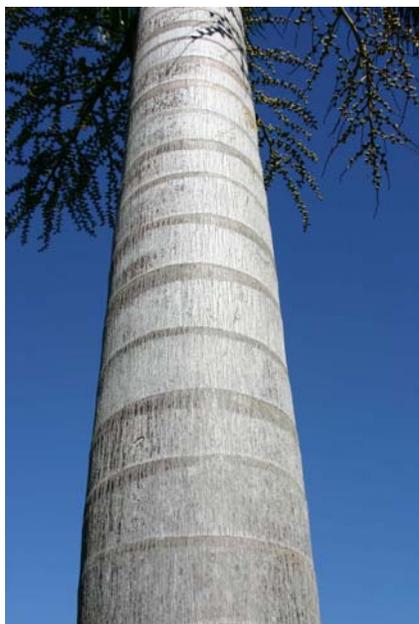
Wodyetia includes a single species of solitary palm. It is endemic to monsoon and rocky scrubland of northeastern Australia where it grows at elevations to 1200 feet. It became a commonly used palm in South Florida early in this century. Its fast growth and elegant look made it a competitive replacement for royal palm (*Roystonea regia*). The foxtail palm is a popular item for landscaping in tropical and subtropical areas.

Trunk

In South Florida the trunks of most mature foxtail palms are 20 to 30 feet tall. It is gray and columnar with distinct widely spaced leaf scar rings on the younger upper portion and fading on the lower aged surface. The base of the trunk is often flared and mostly 12 to 16 inches in diameter. On some palms the trunk pseudobark closest to the ground cracks and roots will begin to form. These “root initials” sometime fail to penetrate the soil limiting their further growth as functioning roots.

Crownshaft

The crownshaft is positioned immediately above the trunk. It is waxy, light green, 3 to 4 feet long, tapering from the base to the top. It protects the bud or meristem which produces new embryonic leaves, flowers, and trunk tissue.



Prominent leaf scars



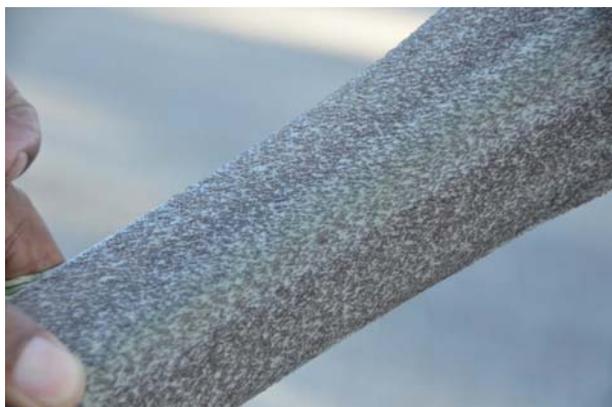
Root initials



Crownshaft and inflorescence bracts

Leaf

The leaf is arching with a dark-green appearance. There are 8 to 12 leaves in a healthy crown each from 10 to 12 feet long. The crown is 14 to 20 feet wide. The leaf is on a short petiole 6 to 12 inches long that is whitish green and covered with cinnamon colored scurf that is also prominent along the upper and lower rachis. The pinnately compound leaf has several leaflets united at its base on the rachis but growing at different angles. The effect makes it one of the most plume-like leaves in the family and alludes to its common name. Marginal veins are infrequent and may appear towards the leaf base. The newest unopened leaf is known as the leaf spear.



The short petiole is covered with cinnamon colored scurf



Several leaflets merge when connected to the rachis



Appearance of the crown from beneath



Individual leaf

Flowers and Fruits

The species is monoecious. Male and female flowers are produced on the same palm and on the same inflorescence. The inflorescence is at first contained in a bract which lies at the top of the trunk, immediately below the crownshaft. The bract is light to medium green and is approximately 12 to 18 inches long and about 8 inches wide. The inflorescence is a much-branched panicle with many white or yellowish green flowers. It takes approximately one year for flowers to develop into mature fruits or drupes. Mature drupes are 2-inch-long, oblate spheroids shaped, and are colored deep orange to red. The inflorescence and fruit stalks are mostly between 3 and 4 feet long.



Inflorescence bract



Mature fruits on trunk



Mature fruits

Placement and Maintenance Considerations

After been planted, some foxtail palms may show little or no signs of growth for one to two years. Container-grown palms are often chlorotic and grow poorly during the first year of establishment due to nitrogen deficiency within the original root ball, while those that are planted too deeply may grow slowly and poorly for many years. Once new leaves begin to emerge, healthy palms are fast growers. Foxtail palms apparently grow faster in full sun than in shade. They can withstand periods of drought but under those conditions their growth rate decreases and they do not reach their normal height. Stressed palms have difficulty recovering and may be symptomatic for years. While they can survive in calcareous soils, foxtail palms grow best in a slightly acidic free draining soils. Young palms that have not established are generally not cold hardy for periods of more than two hours below 35°F. Older established palms are not suitable north of zone 10a or when temperatures dip below 30°F for an extended period of time. The palm is self-cleaning meaning that older leaves die and quickly fall from palm to facilitate new leaves. If the older leaves turn brown and remain on the palm for an extended period then nutritional deficiency or disease is usually the cause.

Nutritional Deficiencies

Manganese deficiency:

Several plant nutrients are often deficient in foxtail palms unless fertilized correctly. Frequent among these is manganese deficiency which leads to a condition known as “frizzle top.” Symptoms first become apparent on new leaves which emerge chlorotic, weak and reduced in size. They become increasingly necrotic especially towards the base as they expand in size. As the deficiency progresses, succeeding leaves will emerge greatly reduced in size, completely withered, frizzled, or scorched in appearance. Eventually affected new leaves become old leaves and the entire canopy may become brown and necrotic. Frizzle top can be terminal but it can also be prevented or reversed with proper fertilization. Correcting this deficiency in palms will take many months. [Click here](#) for more information.



Frizzle top caused by manganese deficiency



Frizzle top. Notice the necrotic basal areas on leaves.

Boron deficiency:

Boron deficiency sometimes occurs in foxtail palms. Leaflets at first may be hooked or bent. The rachis or leaf tip may be devoid of leaflets. New spear leaves may be tightly fused along their entire lengths or at the leaf tips or the bases. New leaves may also emerge small in size, with crumpled, corrugated or accordion-like leaflets. Fruits may drop prematurely or inflorescences may become necrotic. [Click here](#) for more information.



Unopened spear leaves caused by boron



Corrugated leaves caused by boron deficiency

Potassium deficiency:

Potassium deficiency is a very common problem of palms in Florida. Symptoms vary among palm species, but always occur first on oldest leaves and affects progressively newer leaves as the deficiency becomes more severe. On some species, marginal necrosis on the leaflets is the typical first sign of deficiency. Thus the portion of the leaflets closest to the central rachis remains green. As the symptoms progress, the entire leaf appears burnt and withered. When all available potassium has been shunted from the older leaves to the new growth, the palm declines. The emergence of small, frizzled or chlorotic new leaves indicate that without immediate treatment, the palm will probably die. [Click here](#) for more information.



Symptom of a potassium deficient foxtail palm

Other nutrient deficiency considerations:

There are a number of deficiencies with overlapping symptoms in this species, making visual diagnosis of the exact elements involved difficult. Symptomatic leaves on nutrient deficient palms will never recover and must be replaced by new, healthy leaves. In severely deficient palms, this means replacing the entire canopy which may take two years or longer.

Foxtail palm is a solitary palm meaning it naturally grows with a single trunk. When two or more palms are grown together with their trunk bases touching there is a tendency for one or more of the palms to develop poorly. The tendency is often avoided with proper fertilization.

Insect Problems

Occasionally sucking insects such as mealybugs and whiteflies are found on the leaflets of palms. Their presence usually requires no insecticidal treatments. The [rugose spiraling whitefly](#) has not been an issue of concern. Banana moth larvae and grubs of rotten sugar cane borers have been found in the trunks.

Ambrosia beetles:

Ambrosia beetles develop differently from other beetles. All tunneling is done by the adult female which constructs a brood chamber in the trunk. The beetles invariably carry into the brood chamber certain fungi (e.g. *Ambrosiella* spp.) with which they have a mutualistic relationship. The fungi colonize the damaged wood, and the larvae feed on the fungi.

Ambrosia beetles attack palms, trees and shrubs that are stressed, weakened, wounded or recently dead. Fleeting straw-like wood shavings are sometime seen on the lower half of the trunk. They are caused by mature female beetles forcing their way out of the trunk. After which, blotches of dark stain from interior sap flow become apparent on the trunk in the areas of the small exit holes left by the migrated beetles. Whether the ambrosia beetles are causing the decline or are attracted to a declining palm, and why the palm is declining, is still not known.



Crown of ambrosia beetle affected palm



Minute holes and dark colored sap left by emerged female ambrosia beetles



Larva of an ambrosia beetle



Mature beetle



Numerous holes in the interior trunk

Disease Problems

Leaf spots:

Palm leaflets and rachis often have pronounced spots and lesions which may either be primarily or secondary caused. They can be induced by environmental or cultural conditions such as excess irrigation on leaves, high pH, iron deficiency, potassium deficiency, compacted soils, cold weather, and poorly developed root systems. The latter may be associated with pot-bound palms or those planted too deeply. Leaf spots and leaf death have been associated with fungi such as Anthracnose (*Colletorichum*), *Diplodia*, *Exserohilum*, *Petalotiopsis*, and *Phomopsis*. Only a laboratory analysis is able to distinguished one fungus from another. Even so, recovery from the effects of diseases may be difficult, especially if any underlying casual situations are not properly addressed.



Anthracnose leaf spots



Petalotiopsis necrotic leaflets



Leaf death due to *Diplodia*

Ganoderma butt rot:

Foxtail palms can be affected by Ganoderma butt rot caused by *Ganoderma zonatum*. Once affected, the palm will eventually die. Because the fungus is decaying the wood in the lower, inner portion of the trunk, disease symptoms progress from the older leaves upward. Leaves turn brown and droop to the trunk, as the water supply to the canopy is reduced. A sure sign of the disease is the conspicuous appearance of the fruiting bodies of the fungus known as conks at the bottom of the trunk. Affected palms must be removed and the infested trunk destroyed. The stump should either be pulled out or grounded out. Before its removal, all visible conks should be collected and destroyed. Affected palms left standing may topple. If Ganoderma has been diagnosed in a landscape site, it is recommended to replant with a broad-leafed tree or shrub and not with another palm species. No palm species is considered resistant to the disease.



Ganoderma butt rot affected palm



Conks of Ganoderma butt rot

Pictures of Healthy Foxtail Palms



References

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Palm Links

- [Bismarck palm](#)
- [Cabbage palm](#)
- [Cabbage palm pictorial](#)
- [Florida native palms \(power point\)](#)
- [Florida thatch palm](#)
- [Fusarium decline of queen palms](#)
- [Lightning strikes on coconut and royal palms](#)
- [Nutrition and fertilization of landscape palms](#)
- [Palm problems \(power point\)](#)
- [Transplanting Sabal palms](#)

Videos

- [Ganoderma butt rot](#)
- [Palm weevils in Bismarck palm](#)
- [Palm weevils in Canary Island date palms](#)

All pictures taken by Stephen H. Brown

This fact sheet was reviewed by Drs. Monica Elliott and Timothy Broschat, Fort Lauderdale Research and Education Center, Fort Lauderdale; Peggy Cruz, Horticulture Specialist, Lee County Extension; Pat Rooney, Lee County Master Gardener.

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